Blueleaf Incorporated Pilot Testing Qualifications

OVERVIEW

Blueleaf Incorporated is a small process engineering company located in New England that performs pilot studies for water and wastewater treatment systems. We have completed almost 70 pilot studies in the last four years in the US and Central America investigating the removal of iron, manganese, arsenic, organics and other contaminants from potable water sources, and many pilot studies investigating nutrient removal from wastewater treatment systems.

PROFESSIONAL INDEPENDENCE AND INTEGRITY

Blueleaf's main clientele is consulting engineers and treatment system manufacturers. We provide an independent and impartial third party evaluation of the processes selected by the consultant, or proposed by the vendor. Consulting engineers find that Blueleaf helps them to be more competitive, by adding experience of specific processes to their team, by providing fully equipped and tested pilot and laboratory equipment, and by providing a third-party evaluation of the processes. Vendors find that Blueleaf helps them to be more competitive by providing their clients with the assurance that comes with independent evaluations.

COMPETENCE

Blueleaf is comprised of a group of science-minded professionals interested in advancing the understanding of water treatment. We use methods of statistical analysis and experimental design that are used in many other industries to improve the performance of treatment systems.

Rising floc from backwashing biological iron filter

SERVICES

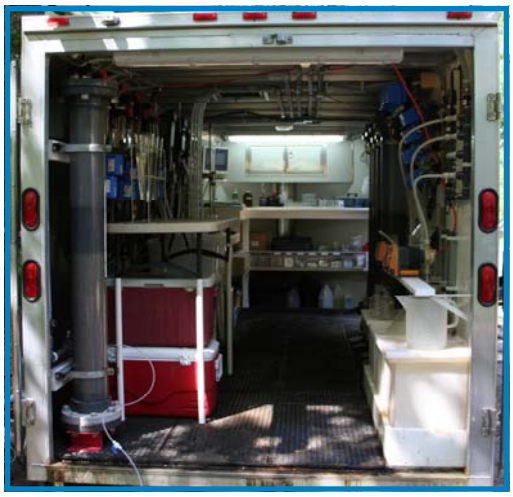
Pilot plant studies are performed to predict the performance of a process. Blueleaf can design the pilot facility to investigate the variables of interest, perform sampling and analysis of the raw water and effluent streams, and complete the data analysis and report. Pilot studies can be designed to develop parameters for full-scale design, compare two or more processes to choose the most efficient or cost-effective, and assess the effect of changes in raw water quality.

System optimization services use methods of statistical analysis and experimental design embraced by corporations in many other industries used to improve the performance of treatment systems. The field of water and wastewater treatment can be thought of as an industry that creates a high-quality product with highly variable raw materials. Methods made popular by Demming and Taguchi are applied to this process to identify methods to reduce finished water variability and improve overall water quality.

Water and wastewater characterization is done to identify important parameters for further design and testing. Identify sources, flows and composition of industrial or municipal wastewater. Identify seasonal variability of raw water quality of drinking water source.

Start-up services are offered to assist engineers, contractors and manufacturers' representatives in making a new treatment process functional. Provide services for the emergency restoration of service due to the failure of a major piece of equipment, flood or fire.

Automated Pilot Filters for Ozone/BAC Pilot



CAPABILITIES

Adsorptive Media Processes

This portable Adsorptive Media Trailer is capable of piloting four adsorptive media filters in a side-by-side comparison using identical raw water and pretreatment conditions. The trailer has individual control of flow rates, as well as continuous monitoring of pressure loss and turbidity of each filter. The trailer measures 14'L x 8'W x 7'H and uses a single 20Amp 120V electrical supply. The pilot system is equipped with a pressure reducing valve (PRV) on the raw water supply line and requires 10 gpm at 45 psi.

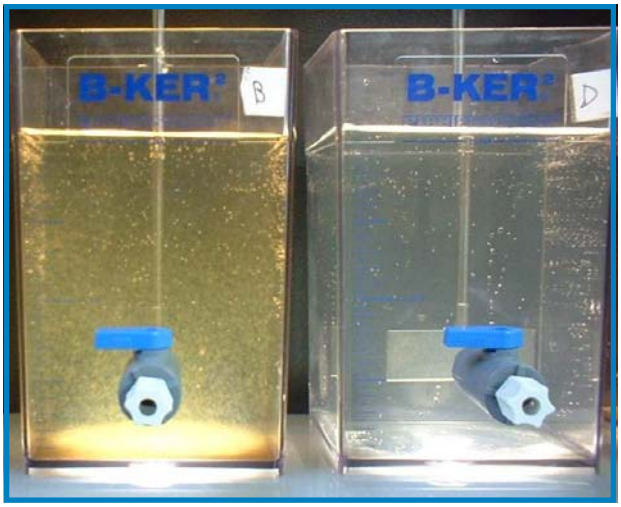
IDI Ferazur/Mangazur Process

This portable Ferazur / Mangazur Trailer is capable of piloting an Infilco Degremont Technologies process that uses an inert media for the organic removal of iron and manganese. The trailer has individual control of flow rates, as well as monitoring of pH, temperature, flowrate, pressure loss and turbidity of each filter. The trailer measures 16'L x 8'W x 11'H and uses a single 20Amp 120V electrical supply. The pilot system is equipped with a PRV on the raw water supply line and requires 10 gpm at 45 psi. The pH and dissolved oxygen of raw water are balanced prior to distribution to the first filter for biological iron removal. The filter effluent is then re-balanced for pH and DO prior to being fed to the second filter for biological manganese removal. Each filter is equipped with a system of four manual ball valves that allow for automated control of filter service and backwash cycles.

Conventional Treatment Trailer

The Conventional Treatment Trailer is equipped with mixers, chambers and a settling basin. The trailer is 16'L x 8'W x 11'H and uses a single 20Amp 120V electrical supply. Pilot water supply requires 10 gpm at 45 psi.

CAPABILITIES



Bench-Scale / Jar Testing

This portable Bench-Scale / Jar Testing Trailer is for the evaluation of chemical pretreatment, and coagulation and sedimentation needs. The trailer is equipped with a four-position Phipps Bird Jar tester, streaming current monitor, and all necessary field equipment to monitor and control the water or wastewater chemical treatment and coagulation system. Stock chemicals are provided by several chemical suppliers, so the evaluation of potential treatment alternatives will remain competitive. The trailer is 16'L x 8'W x 11'H and uses a single 20Amp 120V electrical supply. Continuous pilot water supply is not required.

Ozone Generation and BAC Process

The Ozone Testing Trailer is equipped with a Pacific Ozone generator; recycle pump; injection nozzles; ozone contact tanks; ozone quench system and quenching tank, and two pilot filters. Trailer is 16'L x 8'W x 11'H and uses a single 20Amp 120V electrical supply. Pilot water supply requires 10 gpm at 45 psi.

Emergency Chemical Feed Trailer

This Emergency Chemical Feed Trailer is capable of providing long term non-permanent chemical feed for water and wastewater treatment facilities. Although easily adapted, the trailer is traditionally used for disinfection purposes. The trailer measures 16'L x 8'W x 11'H and uses a single 50Amp 120/240V electrical supply.

KEY PERSONNEL

Erik J. Grotton, P.E., President (right)
Erik is the Founder and President of the firm and has been piloting water treatment processes for 20 years. Erik has a broad range of experience with the water and wastewater industries, and uses the experience to find practical solutions to treatment problems. Erik has an MS degree in Civil Engineering from the University of New Hampshire and is a Registered Professional Engineer in Massachusetts, New Hampshire, Connecticut and Rhode Island. He specializes in statistical analysis for process optimization. He has experience piloting processes for the removal of iron, manganese, arsenic, organics, fluoride, ammonia and phosphorus.

Mark R. Johnson, P.E., Project Engineer (center)
Mark has more than 25 years of experience in the water industry, in research, manufacturing, consulting and construction. He has developed pilot study experience in such diverse places as Tegucigalpa, Honduras, and Orono, Maine. Mark has a MS degree in Civil Engineering from Worcester Polytechnic Institute, is a Registered Professional Engineer in Massachusetts and is fluent in Spanish. He specializes in iron, manganese and arsenic removal processes using chemical or biological methods, temporary disinfection and full-scale system start-up services.

George R. Swedberg, Project Engineer (left)
George has eighteen years of pilot experience with water, wastewater, and hazardous waste treatment processes. George has a BS degree in Civil Engineering from the University of New Hampshire. George specializes in bench-scale evaluation of coagulation and precipitation processes, and in statistical analysis for process optimization. He has experience piloting processes for the removal of iron, manganese, arsenic, organics, fluoride, ammonia and phosphorus.